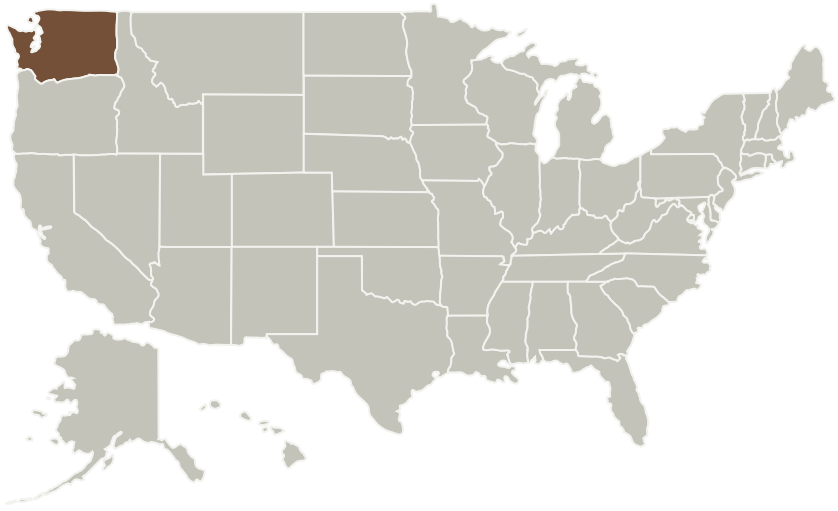
Security and Hyper-accurate Positioning Monitoring with Automatic Dependent Surveillance-Broadcast (ADS-B), Phase II

Completed Technology Project (2010 - 2012)

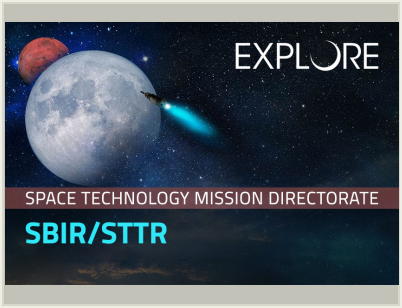
Project Introduction

Lightning Ridge Technologies, LLC, working in collaboration with The Innovation Laboratory, Inc., extend Automatic Dependent Surveillance -- Broadcast (ADS-B) into a safe, secure, authenticated system. Historically, ADS-B has been criticized for its inability to guarantee safe and secure surveillance in all operational conditions. The technology presented provides an integrity check on all ADS-B data that is independent of all primary surveillance modes and is 100% robust to all Global Positioning System (GPS) spoofing attacks. An important by-product of that integrity check provides us with the further ability to do aircraft-to-aircraft relative positioning that is more accurate and more reliable than any civilian system in existence today. The ADS-B integrity check and the aircraft-to-aircraft positioning can provide a further basis on which to enhance the safety of the National Airspace System (NAS). Our innovation extends ADS-B into a new standard for providing safe, secure, and authentic surveillance, which is required for Separation Assurance (SA) and Traffic Flow Management (TFM) in the Next Generation Air Transportation System (NextGen).

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Lightning Ridge Technologies	Supporting Organization	Industry	Seattle, Washington



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Security and Hyper-accurate Positioning Monitoring with Automatic Dependent Surveillance-Broadcast (ADS-B), Phase II

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Primary U.S. Work Locations
Washington

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
  - TX05.3 Internetworking
    - TX05.3.3 Information Assurance